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How Do Retirement Income Projections Affect Saving Behavior?

By Gopi Shah Goda

Congress is considering requiring retirement plan sponsors to provide participants of defined contribution plans with information about projected annual income at retirement. Using a large-scale field experiment involving university employees, we find that providing retirement income projections along with general retirement planning information induces individuals to increase their saving for retirement. Our findings suggest that individuals are not perfectly informed about the link between saving today and income in retirement, and that, on average, people tend to overestimate the level of retirement income that current saving generates.

Introduction

Given the widespread transition from defined benefit (DB) to defined contribution (DC) retirement plans, Americans increasingly face the challenge of assessing whether their savings are likely to provide for a secure retirement. Many Americans must make choices about their retirement saving while faced with uncertainty about future rates of investment return, inflation, health status, income, and other factors, and about how current contributions will translate into retirement income. This kind of projection and planning is challenging even for the financially sophisticated, and even more so for those who struggle with basic financial concepts (Lusardi and Mitchell 2007).

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About The Author

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The U.S. Congress is considering policies aimed to help Americans assess their level of retirement saving, including the recently proposed Lifetime Income Disclosure Act (S. 267; HR. 1534). This act would require defined contribution plan administrators to annually provide income disclosures that include the projected annual income an individual's current retirement savings would provide if the accumulated assets were annuitized at retirement. The proposed policy has bipartisan and common sense appeal, as it may help people make more informed decisions at a relatively low cost.

This brief summarizes the results of a study designed to determine the impact of similar income projections on retirement saving decisions (Goda, Manchester and Sojourner 2012). Using a large-scale field experiment involving university employees, we measure how an intervention designed to inform individuals about the relationship between current contributions and retirement income affects their saving behavior. We find that individuals sent an informational mailing regarding how contributions translate into retirement income, along with general retirement planning and enrollment information, increased their annual contributions by approximately $85 per year (a 3.6 percent increase in savings equal to 0.15 percent of average salary), relative to individuals who were not sent a mailing. Our results suggest that projections of how current contributions generate retirement income can influence the level of contributions into tax-deferred saving plans, and that people do not fully understand how saving today translates into income in retirement.

Description of Study

Our study involved faculty and staff at the University of Minnesota who were eligible to participate in either of two Voluntary Retirement Plans (VRPs), each of which allows employees to make tax-deferred contributions of up to $16,500 annually on top of their mandatory retirement plans. Our sample consisted of nearly 17,000 employees in 1,385 departments across five different campuses and extension offices. The study took place between October 2010 and May 2011.

We randomly assigned employees into either a control group or a treatment group. The treatment group was sent an informational intervention that we designed, while nothing was sent to the control group. The informational intervention consisted of a four-page color brochure sent through internal mail. The first page prompted individuals to think about their retirement goals, and offered general information about saving for retirement. The second page contained a customized projection of the account balance achieved and retirement income projections from different hypothetical additional contribution levels. Figure 1 illustrates how the information was displayed to the employees in the treatment group. Finally, the brochure also provided a step-by-step guide of how to both enroll in the plan for the first time or to change one's current contribution level.

The account balance and income projections were customized based on the employee's current age. Constructing the projections required assumptions about the rate of return on investments, retirement age, and contribution amount. To address the important policy question of how the effect of the intervention may differ based on the assumptions used, we randomized the assumptions used across individuals. This allowed us to test the effect of providing different rates of return, retirement ages, and

additional contribution amounts on different saving outcomes.[1,2]

Findings

We measured the effect of our informational intervention by comparing changes in saving outcomes of individuals in the treatment group with those in the control group. We chose this approach rather than sending treatment materials to all employees, because with the latter we would not have been able to determine whether changes in saving behavior were influenced by the treatment or by something else that changed in the environment during the time of the intervention (such as economy-wide conditions). Furthermore, by randomizing employees into treatment and non-treatment groups, we ensured that any difference in saving behavior was not due to inherent differences in the group's composition.

We measured the effect of our intervention on contributions to VRPs by analyzing administrative records prior to and following the informational intervention. We compared whether people in each group made changes in their contributions to VRPs, and by how much, using two measures constructed for each employee:

- **Contribution Change**, which indicated whether any change was made in the annual contribution amount, including changes in participation status, between October 2010 and April 2011;

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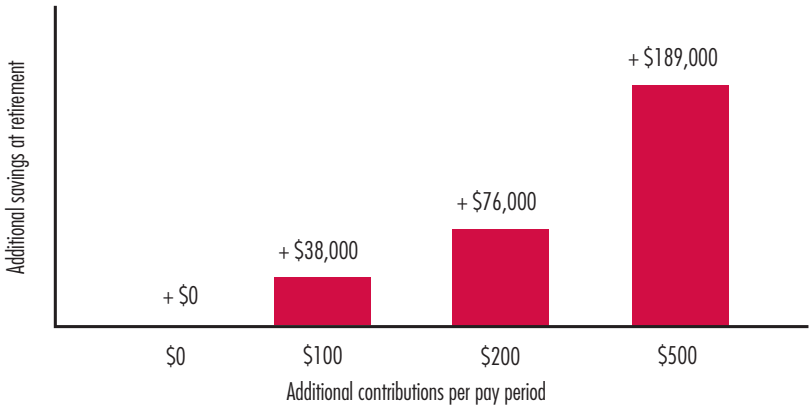
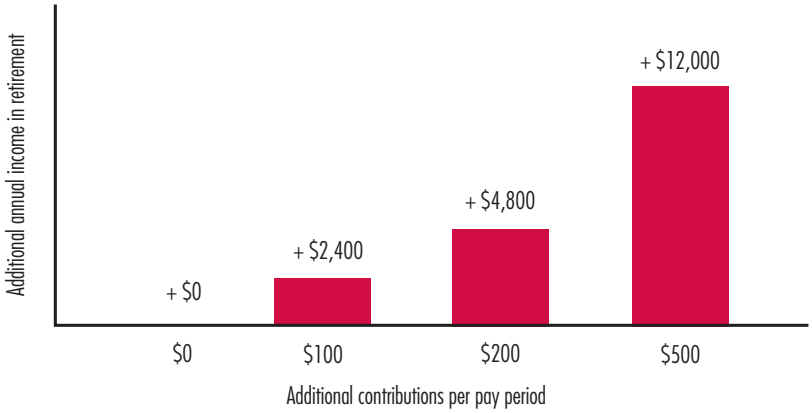
Figure 1:
Example Projections for an Individual in the Treatment Group



(a) How additional contributions map to additional savings at retirement



(b) How additional contributions map to additional annual income at retirement

1 The assumed investment return was 3 percent, 5 percent or 7 percent, and we used two different retirement ages: 65 and 67. The set of hypothetical additional contributions used in the projection was either {$0, $50, $100, $250} or {$0, $100, $200, $500} per pay period.

2 Individuals in the treatment group were also provided with access to an online customization tool designed to mimic the information provided in the brochure, but with the added ability to adjust assumptions regarding marital status, expected retirement age, and expected investment returns. Visitors to the online tool could add other sources of retirement income and expected Social Security benefits to get a more comprehensive picture of their retirement savings portfolio.

- **Amount of Change**, which measured the change in the annual contribution dollar amount between October 2010 and April 2011.

Figure 2 shows the percentage of employees in the control and treatment groups who changed whether they participated in the VRP or the amount they contributed, adjusting for differences in gender, age, salary, tenure, faculty status, and campus location across the two groups. The data reveal that the informational intervention indeed had an effect on behavior. While approximately 4 percent of the control group made a change, the treatment increased the percentage of people who made a change to 5.25 percent, an increase of approximately 30 percent. Note that this outcome measures whether the employee made a change in any direction, and includes those who made changes that reduced the amount they were contributing.

Figure 3 depicts the change in the annual dollar amount contributed by the two groups, after adjusting for differences in gender, age, salary, tenure, faculty status, and campus location across the two groups. The treatment group increased contributions by an average of $169 per year, while the

Figure 2:
Percent of Employees who Changed Their Contribution Amount in Control and Treatment Groups

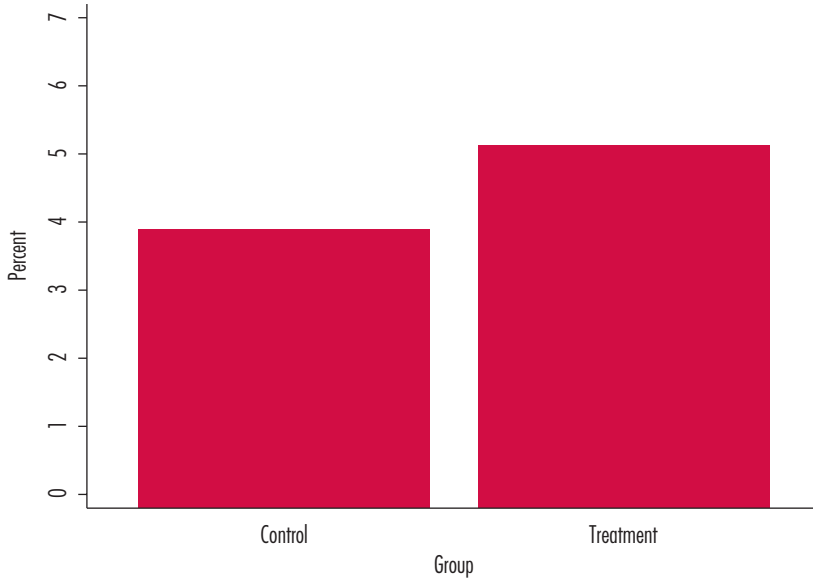


Figure 3:
Average Change in Annual Contribution Amounts in Control and Treatment Groups

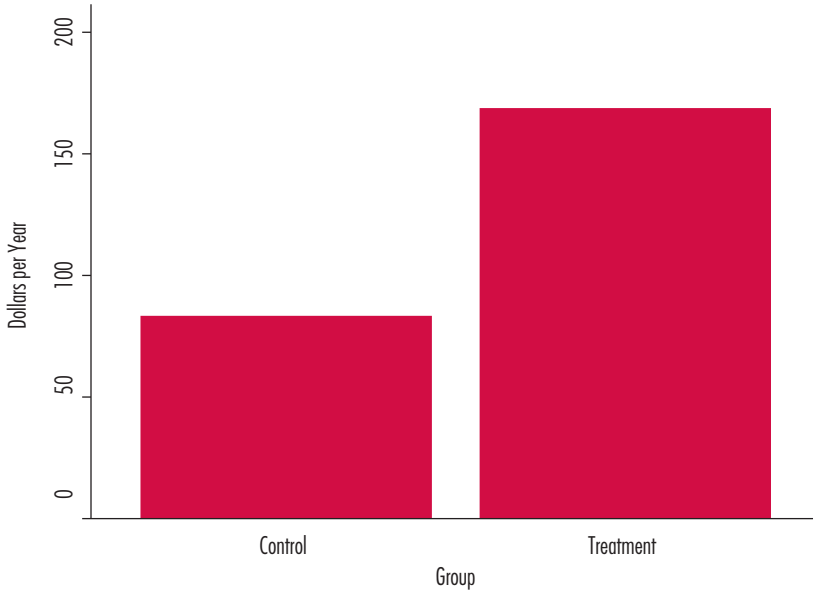


Table 1:
Description of Information Sent to Various Treatment Groups

	Control	Planning	Balance	Income
General information on savings for retirement and signing up for VRP		X	X	X
Customized information on how additional contributions affect *account balances* at retirement			X	X
Customized information on how additional contributions affect *income* in retirement				X

Note: Employees in the Control group received no information, while employees in the Planning, Balance, and Income treatment groups were sent information as indicated by the X.

control group increased their contributions by $83 per year. This annual $86 increase equates to 3.6 percent of the average level of contributions, or approximately 0.15 percent of the average salary.

Interestingly, we found that the effect of the intervention on saving differed depending on the assumptions used in the projections. Individuals sent projections that used higher contribution amounts (i.e., increments of $100 versus increments of $50) made significantly larger increases in their contribution levels. In addition, individuals sent projections based on the later retirement age of 67 had significantly larger increases than those with projections based on age 65; this effect was concentrated among employees who were non-participants prior to the intervention. Since both of these assumptions resulted in larger amounts of savings and income in retirement, these findings indicate that employees are more likely to increase their savings rates when they are sent higher-value projections. This result underscores the important role the assumption guidelines could have on the impact of such income projections.

To more clearly determine which components of the treatment generated the effects observed, we also randomly assigned other employees to two separate partial-treatment groups in addition to the groups described thus far. The differences between these groups are highlighted in Table 1.

A "planning" treatment group was sent the same general information on setting retirement goals and how to change one's current contribution level, but personalized retirement balance or income projections (i.e., the graphs shown in Figure 1) were omitted. A "balance" treatment group was sent these same materials plus a projection of account balances at retirement (Figure 1, top panel), but the retirement income projections (Figure 1, bottom panel) were omitted. We refer to the full treatment group as the "income" treatment group below.

Individuals sent the partial or full treatments were more likely to make changes in their contributions than those in the control group. This suggests that general information about retirement planning influenced behavior on this dimension. However, the planning group did not significantly increase their level of savings, while the balance group did. Still, the amount was less than that of the income treatment group described earlier. Our findings

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thus suggest that it was the information contained in the full income projections that led people to increase their level of savings.

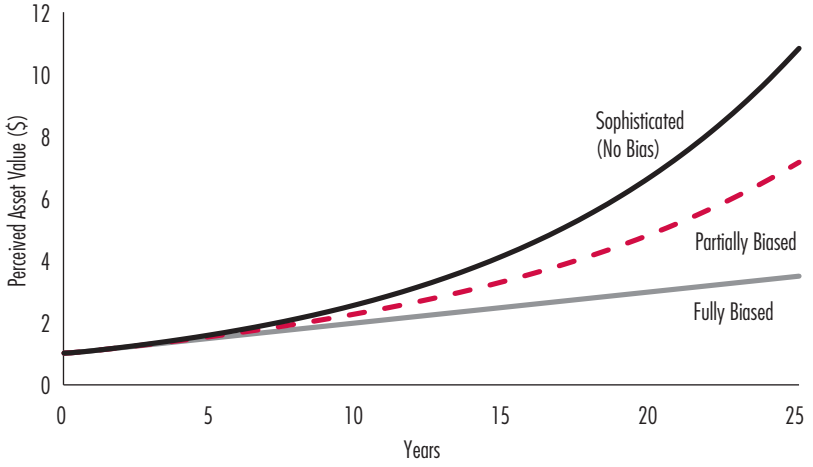
While the effect of the projections on contribution levels was modest, the intervention may have had a larger impact on the saving process by improving the employees' ability to assess their financial security. We supplemented our experiment with a follow-up survey which asked employees additional information about their retirement saving and their financial literacy. Among survey respondents, those in the income treatment group were more likely to report having recently engaged in retirement planning, feeling better informed about retirement planning, and feeling more certain about the amount of income they expect to have in retirement than those in the control group.[3] In addition, individuals in the treatment group reported greater satisfaction with their financial condition. These results indicate that, among survey respondents, individuals sent the income projections were more likely to achieve important milestones in the saving decision-making process.

Discussion and Future Work

Our findings indicate that providing income projections along with general retirement planning information induces individuals to increase their savings. If there had been no effect of the treatment on saving behavior, we would have concluded that the relationship between saving and retirement income was already, on average, well-understood. However, given that those in the treatment group increased their level of contributions by more than the control group, our experiment suggests that people may not fully understand how rates of saving translate into retirement income. Our study indicates that in the absence of information about the relationship between saving and retirement income, people save less. While there are some differences in the projections we provided and those that the proposed legislation would provide, our findings suggest that overall saving for retirement may increase modestly as a result.

Why might income projections cause individuals to save more? One possibility is that individuals tend to underestimate the return on their savings and simultaneously

Figure 4:
Stylized Perceived Savings Trajectories for Savers with Varying Levels of Linearized Exponential Growth Bias



Note: The figure shows the perceived asset value with a starting value of $1 at time zero growing at an annual interest rate of 10 percent.

3 The response rate for our survey was 22 percent, and differs in some observable dimensions from the overall sample. Despite this, we do not find evidence that there are systematic differences across our experimental treatment groups among survey respondents.

overestimate the income flow that could be generated by a given balance at retirement, a phenomenon known as linearized exponential growth bias. Sophisticated savers, with no bias, will perceive their contributions to compound each year and grow at an exponential rate. Fully biased savers will project future savings as though no interest were earned on future earnings, or in other words, they will assume their balance grows linearly. Partially biased savers will be somewhere in the middle. Figure 4 shows a stylized depiction of the perceived savings path of these three types of savers.

A growing body of literature has shown that this phenomenon is pervasive. While the level of bias varies significantly across the population, it has been shown that 96 percent of the population has some level of bias, and approximately one third of the population fully linearizes future returns (Levy and Tasoff 2013). This level of bias is strongly correlated with asset accumulation, with biased individuals having significantly lower levels of wealth and net worth (Levy and Tasoff 2013; Stango and Zinman 2009).

Another potential factor limiting saving for retirement is present bias. Present bias — or procrastination — is the tendency to delay costly actions that are in one's best interests, such as quitting smoking, losing weight, or saving for retirement. Indeed, the results of our survey suggest that interventions such as income projections have much less impact on those with tendencies to procrastinate. While present bias is a known barrier to people initiating or making changes to retirement contributions, less is known about both the relationship between present bias and retirement asset accumulation and its interaction with exponential growth bias.

In future work, we intend to fill this gap by investigating both theoretical and empirical aspects of exponential growth bias and present bias as they relate to retirement saving decisions.[4] We also intend to test the impact of interventions aimed at these biases on retirement saving behavior. This work will help us understand more about optimal retirement saving behavior as well, and will assist policymakers and practitioners who aim to improve the communication of retirement saving information to plan participants.

4 This work is being conducted with Matthew R. Levy, Colleen Manchester, Aaron Sojourner, and Joshua Tasoff.

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